Communicable Disease Report

Hawai'i Department of Health
Communicable Disease Division
Disease Outbreak and Control Division

http://www.state.hi.us/doh/resource/comm_dis/cdr.html **January/February 2003**

Smallpox and the Hawai`i Vaccination Plan

Background

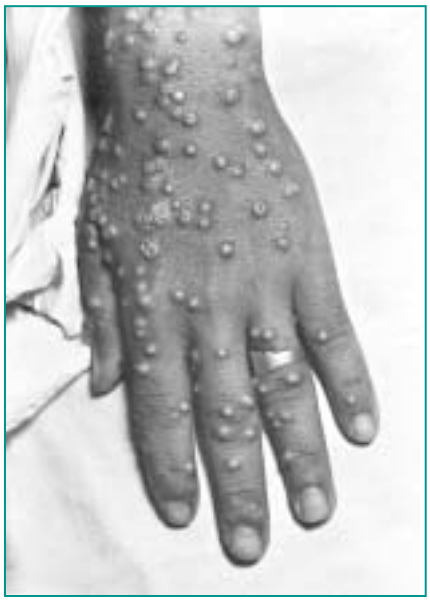
Smallpox is a viral disease not seen in the U.S. since 1949. The World Health Organization declared smallpox eradicated in 1979. However, virus stocks of variola virus were officially maintained at the Centers for Disease Control and Prevention (CDC) in Atlanta and in the State Research Centre in Kaltsov, Russia. A concern is growing that stocks exist in other countries whose intent is to use this virus as a bioterrorist weapon against the U.S.

The Hawai`i State Department of Health (DOH), based on requests from the CDC, has developed plans for administering smallpox vaccinations in Hawai`i. Initially, the CDC requested a state plan to go into effect in the event that a smallpox attack (case) had occurred. This plan, called the Post-event Plan, was submitted to CDC on December 1, 2002. Concurrently with the development of the Post-event Plan, the CDC requested that DOH also prepare a Pre-event Smallpox Vaccination Plan. This second plan delivers smallpox vaccinations to public and hospital-based healthcare workers who comprise smallpox response teams needed to investigate and contain smallpox cases and treat patients with smallpox in the event of an attack.

Pre-event Plan

Hawai`i's Pre-event Plan was submitted to the CDC on December 9, 2002, and approved shortly thereafter. Approximately 3,500 people have been identified to be recipients of the smallpox vaccine in this first phase of the Pre-event Plan. Among those professionals identified are physician and medical epidemiologists, public health nurses and vaccine clinic staff (comprised of DOH staff), hospital-based physicians, nurses, and ancillary staff. The vaccine will not be offered to all physicians and nurses or to the general public in the Pre-event Phase, but will be offered to these groups as well as first responders in subsequent phases of the vaccination program. The DOH is identifying the public health workers who are willing and able to be vaccinated to be part of the public health response teams. Each participating hospital in the state will be identifying their personnel for the hospital-based smallpox response teams. Additionally, a team of specialty physicians is being developed who will agree to be consultants in the event of adverse vaccine reactions or the appearance of smallpox cases in Hawai`i. Those consultants include infectious disease physicians, neurologists, ophthalmologists, and dermatologists.

Many liability issues have arisen since President Bush announced his plan to release the vaccine on December 13, 2002. The Homeland Security Act (304) went into effect on January 24, 2003, is meant to cover liability for hospitals and physicians who participate in the plan. The DOH is working with the



State Attorney General's office to determine coverage for the DOH and hospital employees under state Worker's Compensation Law if an adverse reaction to the vaccine causes loss of work or disability.

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Fourteen clinic sites have been identified in the state with at least one clinic on each of the Neighbor Islands. DOH personnel will be operating the clinics which will be located mainly at hospital sites. Twenty vaccinators in Hawai`i have already received training from CDC in a one-day training session held at the DOH on January 6, 2003. The Bioterrorism (BT) Program will hold a number of educational sessions about smallpox and the vaccine for DOH and hospital healthcare workers and clinicians before the vaccination clinics anticipated to begin in February 2003.

The vaccine

The smallpox vaccine used in this Pre-event Plan is the Dryvax Vaccine manufactured by Wyeth and licensed for use in the U.S. It is a live vaccinia vaccine delivered by a special bifurcated needle to the arm. This is the same vaccine used in the last rounds of routine smallpox vaccinations that were given until 1971 in the U.S. Several pre-trials of the reconstituted vaccine were done at various medical institutions around the country in 2001 and 2002. Although not all the data from these trials are available in a published form, no serious adverse reactions were reported.

Every vaccinee with a successful "take" can expect the development of a papule at the vaccination site after 3-4 days. This papule turns into a vesicle with surrounding erythema at 5-6 days. Approximately a week post-vaccination, fever, malaise, myalgias, soreness at the vaccination site, lymphadenopathy and intense erythema surrounding the vaccination site may occur. Normal variants of the vaccination site may occur in up to 7% of vaccinees and may include satellite lesions, lymphangitis from the site to regional nodes, lymphadenopathy, and an intense erythema considered to be a viral cellulitis. These variants are not considered to be adverse events. As many as 30% of those receiving the vaccination for the first time may miss one day of work or school as a result of these symptoms.

Adverse reactions

Rates of adverse reactions to the Dry-Vax smallpox vaccine are based on data obtained from the 1960's when routine smallpox vaccination was still being conducted. All adverse reactions to the vaccination must be reported to the DOH who in turn will file a VAERS (Vaccine Adverse Events Reporting System) report. Serious reactions may occur in 1,000 people per million vaccinated for the first time (1:1000). Although not life-threatening these reactions may require medical attention:

- A vaccinia rash or outbreak of sores limited to one area. This is an accidental spreading of the vaccinia virus caused by touching the vaccination site and then touching another part of the body or another person. It usually occurs on the genitals or face, including the eyes, where it can damage sight or lead to blindness. Washing hands with soap and water after touching the vaccine site will help prevent this (inadvertent inoculation).
- A widespread vaccinia rash. The virus spreads from the vaccination site through the blood. Sores break out on parts of the body away from the vaccination site (generalized vaccinia).
- A toxic or allergic rash in response to the vaccine that can take various forms (erythema multiforme).

Life-threatening adverse reactions have occurred in 14-52 people per million people vaccinated for the first time, with 1 to 2 deaths occurring per million. Conditions included in this category need immediate medical attention:

- Eczema vaccinatum. Serious skin rashes caused by widespread infection of the skin in people with skin conditions such as eczema or atopic dermatitis.
- Progressive vaccinia (or vaccinia necrosum). Ongoing infection of skin with tissue destruction frequently leading to death.
- Postvaccinal encephalitis. This is inflammation of the brain.

Immune Globulin

Vaccine Immune Globulin (VIG) will be available from the CDC to treat serious and life-threatening adverse reactions to the smallpox vaccine. It is indicated for accidental inoculation, eczema vaccinatum, generalized vaccinia if severe or recurrent, and progressive vaccinia occurs. It is not effective for post-vaccination encephalitis, mild generalized vaccinia, and erythema multiforme. It is also not recommended for mild cases of accidental inoculation. An antiviral medication, cidofovir, has shown promise in *in vitro* studies and in mice infected with vaccinia. Under the Investigational New Drug (IND) protocol, it will be available from the CDC for life-threatening adverse events in which VIG is not efficacious. CDC intends to set up a 24/7 hotline to answer questions from clinicians about adverse reactions to the smallpox vaccine.

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Contraindications for Vaccination

To prevent the above complications, candidates in this pre-event plan will be carefully screened for contraindications to the vaccine. The CDC lists the following as absolute contraindications for the smallpox vaccinees and their close contacts:

- pregnancy at the time of or within one month of vaccination
- immunodeficiencies such as HIV infection, cancer, chronic steroid (prednisone) use, organ transplant, lupus, scleroderma, dermatomyositis
- eczema or atopic dermatitis; present, past or healed
- current and extensive skin diseases such as severe acne, burns, impetigo, contact dermatitis
- inflammatory eye diseases
- allergies to components of the vaccine which include polymyxin B, streptomycin, tetracycline, and neomycin.

Further information about smallpox and the vaccine are available on the CDC website at: www.bt.cdc.gov/agent/smallpox. For more information on the DOH smallpox vaccination plans, or physicians interested in being part of the hospital-based smallpox response teams or specialty consultants, please call (808) 587-6599 in Honolulu.

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The Future of Kalaupapa

Background

Kalaupapa is a tiny rectangular peninsula jutting out of the northern coast of the island of Moloka`i. It is approximately 2.25 miles long by 2.5 miles wide and occupies about 10,726 acres. Rough seas on two sides and 2000-foot sea cliffs on the third side surround the settlement. Accessibility into this isolated settlement is still difficult today and is only accomplished by flying into the small airstrip on small propeller planes or walking down the 2.4-mile cliff trail.

For 103 years, Kalaupapa served as a site for the forced isolation of Hansen's disease (HD) patients. In 1969, Hawai`i's mandatory isolation policy for Hansen's disease care was repealed, and no new patients were sent to Kalaupapa. In recognition of the difficulties and injustices these patients endured, State Law, HRS Chapter 326, Hansen's Disease, provides for all their care and treatment for the remainder of their lives. The law also allows the remaining patient residents of Kalaupapa to live there as long as they choose.

A National Historical Park

In December of 1980, Kalaupapa was designated a National Historic Park under the United States National Park Service (NPS). The companion law to HRS 326 is the federal Public Law 96-565. In addition to establishing the historic national park, the law also charges the NPS with the preservation and interpretation of Kalaupapa and its storied history. Similar to the state law, the federal law also stipulates the remaining patients may live in Kalaupapa as long as they wish as well as provides some funding for community maintenance.

The late Representative Patsy Mink was instrumental in the passage of this landmark federal legislation. Her foresight and guidance insured that, in spite of declining patient numbers, the community infrastructure would be adequately maintained as the National Park Service took on an increasing role within the settlement. With both state and federal laws providing, protecting, and preserving the last remaining Kalaupapa patients' lifestyle and history, Kalaupapa has become a worldwide model as all other leprosariums are faced with declining patient numbers, dwindling resources, and limited alternatives.

Worldwide, all new Hansen's disease patients are treated for their disease on an outpatient basis. Outdated leprosariums remain in use despite the de-institutional-

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ization of HD care because long-term patient residents have nowhere else to go and have severed ties with families and previous lives. Most of the leprosariums are government supported but now face diminishing support and resources as the patient numbers decrease. To continue providing for the patient residents, the more "fortunate" leprosariums have taken on a mixed-use approach such as St. Giles, England which has integrated mental health patients; or Fontilles, Spain, which has incorporated a rehabilitation center. Although these modifications have allowed the HD patients to remain in their "homes," they may not necessarily be the best solution for all those involved.

Currently, Kalaupapa has 41 remaining patients. Approximately 26 live independently in State furnished homes within the settlement. The rest are divided between the Kalaupapa Care Home and Hale Mohalu Hospital in Honolulu. Over the past 20 years, patient deaths have averaged about four per year. The average age of the patient population is 75 years (youngest is 60 years old). As the population ages, the expectation would be to predict increasing deaths but the opposite seems to be occurring. Patient deaths have shown a steady decline from seven in 1998 to only two in 2002 (4-1999, 3-2000, 3-2001). An in-house study evaluated the surviving patients in 2000 and applying life insurance life expectancy tables projected 15 surviving patients in 2018. The Department of Health (DOH) will continue to maintain a presence until there are no longer any patients in Kalaupapa as stipulated by law.

A Condominium Administration

Since 1980 (when the National Park was established) infrastructure responsibilities within the settlement have been shared between the DOH and the NPS. Over these 20+ years and as funding became available to the NPS, some of the DOH's major infrastructure responsibilities have been transitioned to the NPS in anticipation of the DOH's future departure. The settlement's water source and distribution system have been completely turned over to the NPS. The transfer involved upgrading from a surface water collection system to a much more reliable underground well system. Additional funding will be requested by the NPS to replace lead jointed pipes and upgrade the water lines.

The settlement's electrical distribution system and all other electrical responsibility have taken three years of transition to update, and should be completely transferred to the NPS by the end of next year. The NPS plans to upgrade the archaic electrical system at a cost of $3.7 million dollars by 2005. Grant money to study alternative energy resources within Kalaupapa was recently secured by the NPS. The feasibility of fuel cell technology for Kalaupapa will be studied. In addition, two electric vehicles are being utilized by the DOH and NPS in an attempt to establish their cost effectiveness over gas vehicles and reduce the dependency on fossil fuels within the settlement.

A three-year schedule for the transfer of the settlement's landfill responsibility and operations has been developed between the DOH and NPS. The transfer will involve the DOH closing their existing landfill and the NPS constructing a completely new one. In addition, the NPS will comply with new EPA regulations for solid waste regarding cesspools and is planning to construct a sewage treatment plant for high volume areas in the settlement. Other functions may be transferred over to NPS responsibility if and when funding becomes available.

In order to meet their mandate of preserving, researching, and interpreting the Kalaupapa community, the NPS is conducting a preservation project to stabilize 39 settlement structures and will be building a new curatorial building for the storage and preservation of artifacts. The curatorial building, the first new building within the settlement since the early 1970s', should be completed by the end of 2004 at a cost of $4.3 million dollars.

Under a recently extended 20-year cooperative agreement between the DOH and NPS, the DOH will continue to be responsible for all patient related functions. Those functions considered patient related are all patient medical and social services: patient food preparation, service,

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and kitchen, general store and gas station operations, visitor and tour capacities and maintaining the majority of the approximately 150 buildings and structures (most on the National Historic Register).

The state funded operational budget for the settlement has been steadily reduced over the past few years as the state has faced tight fiscal constraints. The current budget is the minimum amount required to safely maintain all the patient services for which the DOH is responsible. Currently, the decreasing patient numbers will not necessarily correlate with decreasing expenses since many of the remaining patient-related operations such as medical care and the kitchen/meals on wheels program must be maintained 24 hours a day, seven days a week. Cost reduction measures are further eroded as economies of scale are lost and medical problems in this aging geriatric population become more frequent, complex and costly.

Although the patient population is slowly dwindling, a strong foundation of insightful and forward looking laws as well as a strong cooperative partnership between the DOH and the NPS will insure that the histories and legacies of those patients at Kalaupapa will be preserved and honored by future generations.

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Submitted by Michael Maruyama, M.P.H.,Chief, Hansen's Disease Branch, and Tom Workman, Superintendent, Kalaupapa National Historic Park.

Giardiasis in Hawaii: 1997-2001, a Five-Year Summary

Background

Since 1992, the Hawai`i Department of Health (DOH) has been collecting surveillance data on *Giardia* cases. In 2002, giardiasis was added to the nationally notifiable disease list. Currently, the data is transmitted to CDC on a weekly basis via the National Electronic Telecommunications System for Surveillance (NETSS). An additional survey was added in 1994 in an attempt to learn more about *Giardia* in Hawai`i through exposure information and demographic characteristics. The purpose of the giardiasis survey was to estimate the burden of disease and to monitor demographic parameters, seasonality, and geographic variation of giardiasis in Hawai`i. Cases of giardiasis are reported to DOH by clinical laboratories or health care providers. The Hawai`i giardiasis surveillance system collects data on persons who have either symptomatic or asymptomatic infections, seek health care, have a positive diagnostic test, and are reported to DOH. When DOH is notified of a case, the health care provider is contacted to obtain clinical and treatment histories. The patient is then contacted by telephone to acquire the risk factor information on the survey. This report summarizes Hawai`i's giardiasis surveillance from 1997-2001.

Year	State	Honolulu	Hawaii	Maui	Kauai
1997	13.4	13.2	9.0	17.1	19.1
1998	10.1	11.3	4.1	8.8	10.4
1999	9.7	9.3	12.2	7.1	13.7
2000	8.7	8.6	8.0	9.3	10.2
2001	9.6	9.6	13.2	7.6	5.1
Average 97-01	10.3	10.4	9.3	10.0	11.7

Table 1: Incidence Rates of *Giardia* in Hawaii by County, 1997-2001
*Based on US Census Population Estimates; per 100,000 population

Disease Statistics

Incidence Rates: There were 625 laboratory confirmed cases of giardiasis reported to the DOH from 1997-2001. The incidence rate for the entire state over the five-year period was 10.3 per 100,000 population with the highest rate (13.4) occurring in 1997 and the lowest rate (8.7) occurring in 2000. The county of Kaua`i had the highest incidence rate (11.7 per 100,000 population) from 1997-2001 while the county of Hawai`i had the lowest incidence rate (9.3 per 100,000 population). Table 1 lists the incidence rates by county for the five years.

Demographics: The median age of reported cases was 31 years of age. 22.4% of all cases were in the 30-39 age group and 21.3% were in the 0-5 age group.

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53.8% of all cases were male and 44.5% were female. Figure 1 shows the age distribution of *Giardia* cases. 6.1% of cases occurred in the same household, indicating a cluster of cases.

Seasonality: 21.8% of cases occurred in the winter months (January, February, March), 24.4% of cases occurred in the spring months (April, May, June), 28.3% of cases occurred in the summer months (July, August, September), and 25.5% of cases occurred in the fall months (October, November, December). Figure 2 shows the seasonality of giardiasis in Hawai`i from 1997-2001.

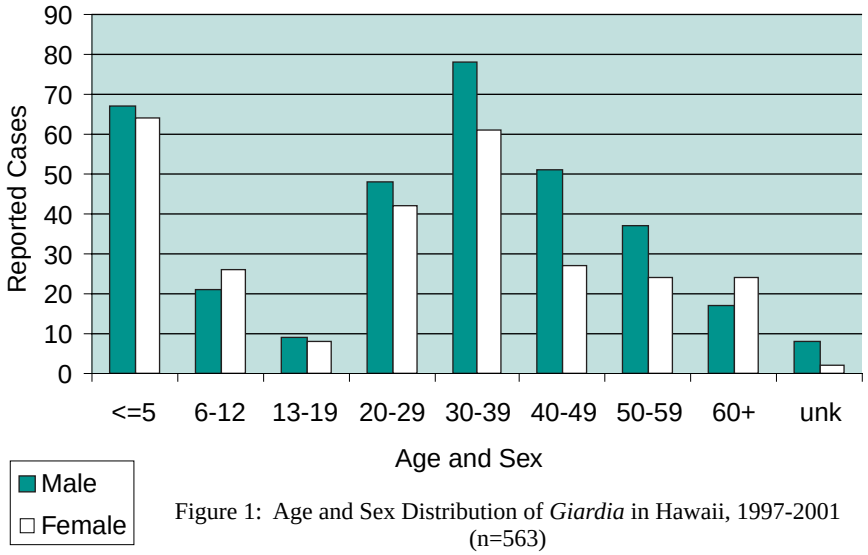

Figure 1: Age and Sex Distribution of *Giardia* in Hawaii, 1997-2001 (n=563)

Geographic Variation: 73.4% of cases resided in the city and county of Honolulu, 11.0% resided in the county of Hawai`i, 10.1% resided in the county of Maui, and 5.4% resided in the county of Kaua`i.

Interviewed Cases

Symptoms: Case interviews for 2000 and 2001 were available for analysis. Of the 223 cases of giardiasis reported in those years, 174 (78%) were subsequently interviewed. The others were lost to follow up. 81.8% of the interviewed cases experienced diarrhea at some time during the illness while 72.5% reported having diarrhea for greater than 24 hours. 59.4% of interviewed cases experienced abdominal cramps, 39.2% had bloating, and 46.0% reported weight loss. Less common symptoms were fever and bloody stools (20.1% and 10.7% respectively).

Risk Factors: 84.5% of respondents reported having a public system for their home water supply. 7.1% reported having had a known infection with *Giardia* in the past. In the month before the illness, 8.2% reported drinking untreated water and 25.3% reported swimming in either a pool or at a beach. 23.4% reported being a contact of a person with diarrhea and 29.6% reported being a household contact of a child in diapers. Only 7.9% of cases reported being a household contact of a child or employee in a childcare, patient care, or institutional setting. Of children of typical childcare age (i.e. children under five years), only 5.4% reported being an attendee of a childcare setting. 44.4% of cases reported having contact with a domestic animal the month prior to the illness. 31.1% reported traveling to either another state or country.

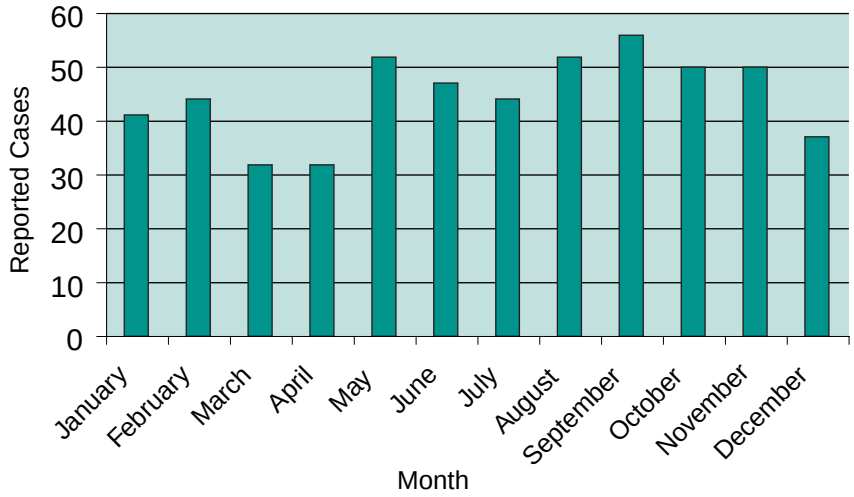

Figure 2: Seasonality of *Giardia* by Date of First Positive Stool Test, Hawaii 1997-2001 (n=625)

Discussion

Compared to the most recent incidence rate of *Giardia* in the United States in 2002, the incidence rate in Hawai`i is almost twice the national rate. However, before 2002 *Giardia* has not been a national reportable disease to the CDC, which may have lead to underreporting in some states. *Giardia* is under passive surveillance, which relies solely on the reporting of laboratories and health care providers. The consistency of reporting is largely unknown. Beginning last year, *Giardia* was added to the nationally notifiable disease list. With this change in status, we can hope to see more reliable rates for each state.

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The age distribution of *Giardia* in Hawai`i is bimodal with peaks in the 0-5 age group and the 30-39 age group. As with other enteric pathogens, children are able to transmit infection to an entire household, especially to those caring for them while they are sick. Children in childcare settings may be more prone to exposure. Prevalence studies have shown high asymptomatic infection rates in daycares across the country. However, data from Hawai`i's survey show low rates of cases being childcare attendees. Perhaps a reorganization of the survey questions would allow for clearer identification of these types of exposures. Proper hand washing after defecation or after changing diapers and prior to preparing food for others is the most important method of reducing transmission of infection.

Seasonality of *Giardia* has been shown on the mainland U.S. However, in Hawai`i there is no specific season when *Giardia* is more prevalent. Because the temperature remains fairly constant throughout the year, there isn't one particular time of the year when people engage in potential risk activities more frequently as they do in other states.

Symptoms reported by the interviewed cases in 2000 and 2001 were consistent with the typical clinical symptoms as found in the 2000 Red Book.

Without a population survey it is impossible to establish risk factors for illness with *Giardia* in Hawai`i. Previous studies and outbreak investigations in other parts of the country have established some potential risk factors including traveling, swimming, and exposure to animals. All of these risks are present in Hawai`i but further research is warranted to determine the specific risk factors associated with giardiasis in Hawai`i.

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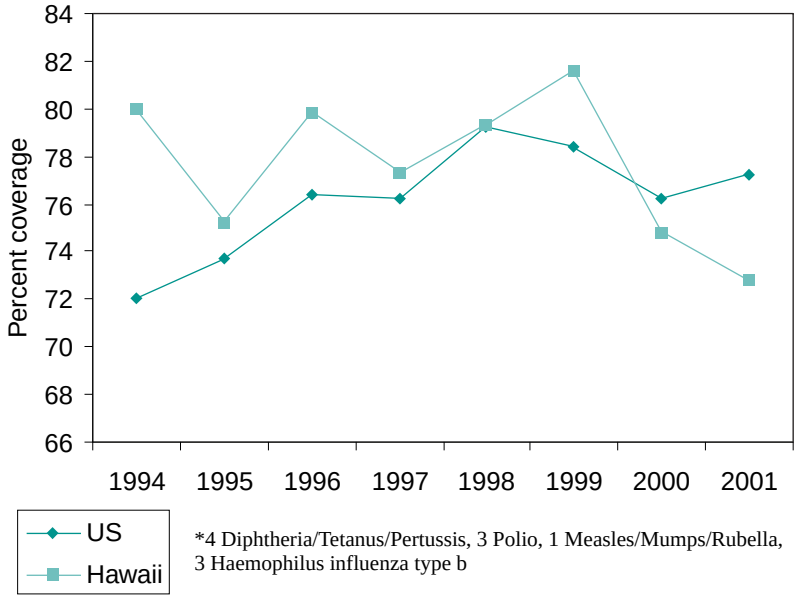
Submitted by Mary Afton, M.S., Epidemiological Specialist, Disease Investigation Branch.

Infant Immunization: Targeting Falling Coverage

Background

In August of 2002, the latest results of the National Immunization Survey (2001) were published. Concerns were raised by the decline in the percent of Hawai`i infants up to date on their immunizations: from 82% in 1999 to 73% in 2001 (Figure 1). In addition, Hawai`i dropped below the national average among states, after being well above average during the 1990's. While there has been no evidence yet of any increase in vaccine-preventable diseases in Hawai`i's children, there is a concern that a larger cohort of susceptible young children creates an increased risk for outbreaks. In order to better describe the problem of underimmunization, and develop targeted interventions, we obtained the public use files of the National Immunization Survey (NIS) to analyze Hawai`i's data from the last five years.

Figure 1. Percent of 19-35 month olds up to date for 4:3:1:3* series: US and Hawaii, 1994-2001.



*4 Diphtheria/Tetanus/Pertussis, 3 Polio, 1 Measles/Mumps/Rubella, 3 Haemophilus influenza type b

Methods

The NIS is an ongoing national, random digit dialing telephone survey of households where a 19-35 month old child is residing. Sociodemographic information is obtained by interviewing the parent, and permission is obtained to contact the child's providers for immunization records. Only children with provider-confirmed records are included in the analyses. Sampling weights are applied to adjust for non-response, and multiple or no household telephone lines. Nationally, the survey is completed for about 23,000 children with adequate provider records. In Hawai`i, the annual sample is about 275.

In addition to publishing routine NIS statistics quarterly, the CDC makes the data available for analysis through a public

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use file via their website. This public use file has been stripped of identifiers, including all geographic coding below the state level, and collapsing categories for race, income, and other sociodemographic variables. For example, the "race" categories available are "black," "white," and "other."

We used the Hawai`i data in the NIS public use files from 1996 to 2001 to: assess changes in immunization coverage over time, assess timeliness of vaccinations, and identify risk factors for underimmunization. For risk factor analyses, the years 1999 to 2001 were combined to obtain a larger sample size (n= 885).

Definitions: The 4:3:1:3 series refers to a child having four doses of diphtheria, tetanus, pertussis (DTP), three doses of polio, one dose of measles, mumps, rubella (MMR), and three doses of Haemophilus influenza type b (Hib). 4:3:1:3:3 includes the above plus three doses of hepatitis B.

Results

From 1999 (the year with highest vaccine coverage in Hawaii) to 2001, the percent of 19 to 35 month olds with a 4:3:1:3 series dropped from 81.6% to 72.8%, or a drop of 8.8% (95%CI 0.6%-17%). Unlike other vaccines, varicella coverage, introduced in 1996 as a required vaccine, rose consistently to the current coverage rate of 80.7%.

The majority of children not up to date for the 4:3:1:3 series had received some or most of their vaccines. By three months of age, 90% of infants had received at least one immunization (other than the birth dose of Hepatitis B), and by 13 months this rose to 98.3%. We assessed "number of visits needed" to bring children up to date for the 4:3:1:3:3 series. We assumed that up to five vaccines could be given in a single visit, and that after 18 months of age, one Hib dose was adequate for any child. Thus, for example, a child missing the 4th dose of DTP and the 3rd dose of Hib would be one visit behind; a child missing the 3rd and 4th dose of DTP would be two visits behind. Among those not up to date for the 4:3:1:3:3 series, 69% were within one visit of being up to date (Table 1). The most frequently missing vaccine was DTP (79%), followed by polio, hepatitis B, Hib, and MMR (29.3%).

Table 1. Number of immunization visits required for children not up to date for 4:3:1:3:3* series: Hawaii 2001

Number of visits required	Percent of children†
1 visit	69.0
2 visits	8.5
3 visits	12.7
4 visits	10.0

*4 Diphtheria/Tetanus/Pertussis, 3 Polio, 1 Measles/Mumps/Rubella, 3 Haemophilus influenza type b, 3 Hepatitis B

† Among those not up to date for the 4:3:1:3:3 series only

Table 2. Risk Factors for Underimmunization: Hawaii 1999-2001

Characteristic	Percent up to date (4:3:1:3)	95% CI
*Race		
White	70.3	63.6-77.0
Black	56.8	30.1-83,5
Other	80.2	76.7-83.8
Poverty		
Poverty	70.0	62.9-78.9
No poverty	78.2	74.6-81.6
Number of children in Household		
1	77.0	71.0-83.0
2-3	78.5	74.4-82.6
>3	67.6	56.2-79.1
Maternal Education		
<12 years	67.6	52.9-82.3
12 years	76.7	71.8-81.6
Some college	74.1	66.3-81.9
College graduate	79.2	72.8-85.6
Mother's Marital Status		
Married	77.3	73.2-81.4
Widowed/separated/divorced	79.6	68.4-90.1
Never married	72.1	64.8-79.3
*Mobility		
Moved to Hawaii	56.4	45.3-67.6
Born in Hawaii	80.6	77.4-83.7

*$p \leq 0.05$

Risk factors for underimmunization are shown in Table 2. Only two factors were statistically significant predictors of underimmunization in the univariate analysis: race and mobility. African-American children had the lowest rates for being up to date (56.8%), followed by white children (70.3%). Children of "other" race (mainly Asian, Hawaiian, or other Pacific Islander) had the highest rates, at 80.2%. 80.6% of children who were born in Hawai`i were up to date, compared to only 56.4% of those who had moved from elsewhere. Unfortunately, in this data set we cannot distinguish between those born in other states of the U.S. and those from other countries. Poverty, maternal age, maternal education, marital status of the mother, and number of children in the household, were not significant predictors.

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In the multivariate analysis, race and mobility continued to be statistically significant. In addition, marital status was also significant: children whose mothers had ever married (whether currently married, separated, divorced or widowed) had higher rates of being up to date (77.5%) than children whose mothers had never married (72.1%).

Discussion

While there has been a concerning drop in immunization coverage among Hawai`i's 19-35 month olds, it is reassuring to find that most children who are not up to date have in fact received most of their vaccines (69% just one visit behind). In addition, we know from school entry records that almost all children (>98%) are up to date by the time they enter kindergarten. The group of susceptible children we need to address are between 12-18 months and five years of age.

The NIS public use file is unfortunately somewhat limited in allowing us to identify risk factors for underimmunization. We have no geographic breakdown below the state level. For the variables we do have, some of the categories are not particularly useful for Hawai`i (e.g. race categories of black, white, and other). Finally, the sample size for Hawai`i is probably too small to identify some risk factors. For example, in the national data set, poverty, low maternal education, low maternal age (<20), and having more than three children in a household are all significant risk factors for underimmunization. These factors are probably also true for Hawai`i.

Several other assessments are planned or have been initiated to address the gaps in information from the NIS. These include a retrospective assessment of immunization status for children entering kindergarten in 2002; a linkage of birth certificate and health plan data; a follow-up immunization survey of Pregnancy Risk Assessment and Monitoring Survey participants; and a qualitative assessment of parental knowledge, beliefs, and perception of barriers.

An Advisory Committee on Infant Immunization, with membership from a wide variety of provider organizations, community groups, and health plans, held its first meeting in October. Recommendations from this committee and its working groups will help guide the Hawai`i Immunization Program in program development.

With better data from the current and planned assessments, and the input of our partner organizations through the Advisory Committee, we are looking forward to improving immunization rates in Hawai`i's keiki over the next few years.

Submitted by Sara J. Whitehead, M.D., M.P.H., Preventive Medicine Resident, Centers for Disease Control and Prevention.

Reorganization of the Epidemiology Branch

The Epidemiology Branch was reorganized into the new Disease Outbreak and Control Division (DOCD), effective November 29, 2002. This division consists of three branches: the Disease Investigation Branch (DI), the Immunization Branch (IM) and the Bioterrorism Preparedness and Response Branch.

The Communicable Disease Division will now be comprised of the STD/AIDS Prevention Branch, the Tuberculosis Control Branch, and the Hansen's Disease Branch.

Paul V. Effler, M.D., M.P.H., Chief of the Communicable Disease Division, is also the Acting Chief of the DOCD.

The former Hepatitis Control Section in the Epidemiology Branch has its functions divided between the new DI and IM branches. Surveillance and investigation of acute hepatitis has been transferred to the new DI. The hepatitis B perinatal and live clinic programs have been transferred to the IM branch. The adult high risk hepatitis B tracking program has been returned to the agencies with whom the participants are affiliated.

The following are telephone numbers of each of the divisions and the branches. Some numbers remain unchanged. Staff of the DI and BPR branches have new direct telephone numbers, as they have moved to a new location in Honolulu.

- Communicable Disease Division: 586-4580
- STD/AIDS Prevention Branch: 733-9010
- Tuberculosis Control Branch: 832-5731
- Hansen's Disease Branch: 733-9831
- Disease Outbreak and Control Division: 586-4586
- Disease Investigation Branch: 586-4586
- Immunization Branch: 586-8300
- Bioterrorism Preparedness and Response Branch: 587-6845

The special reporting telephone numbers and after-hours emergency reporting numbers for Oahu and the neighbor islands remain the same.

The Communicable Disease Report will represent the activities of both divisions.

Submitted by David M. Sasaki, D.V.M., M.P.H., Veterinary Medical Officer, Disease Outbreak and Control Division.

Second Annual Global Public Health Conference

The second annual Global Public Health Conference will be held June 4-6, 2003 at the Hawai`i Convention Center. It will be sponsored by the Hawai`i Public Health Association and the Globalization Research Center in association with other local, national and international health organizations.

The conference will consist of plenary speakers, contributed abstract sessions, and poster sessions. It is designed for public health workers and professionals, health policymakers, health care personnel (health educators, nurses, physicians, social-workers and allied health workers), community advocates, and other interested community persons.

For additional conference information or comments on the planning process, please contact: Patrisha Budhiraja or Ann Davis via email at *gphealth@hawaii.edu.*

Submitted by David M. Sasaki, D.V.M., M.P.H., Veterinary Medical Officer, Epidemiology Branch.

2002 Index of Articles

The following articles were published in 2002 in the Communicable Disease Report. They are listed alphabetically by subject, and include the date of publication and the branch/program that authored the article.

Articles

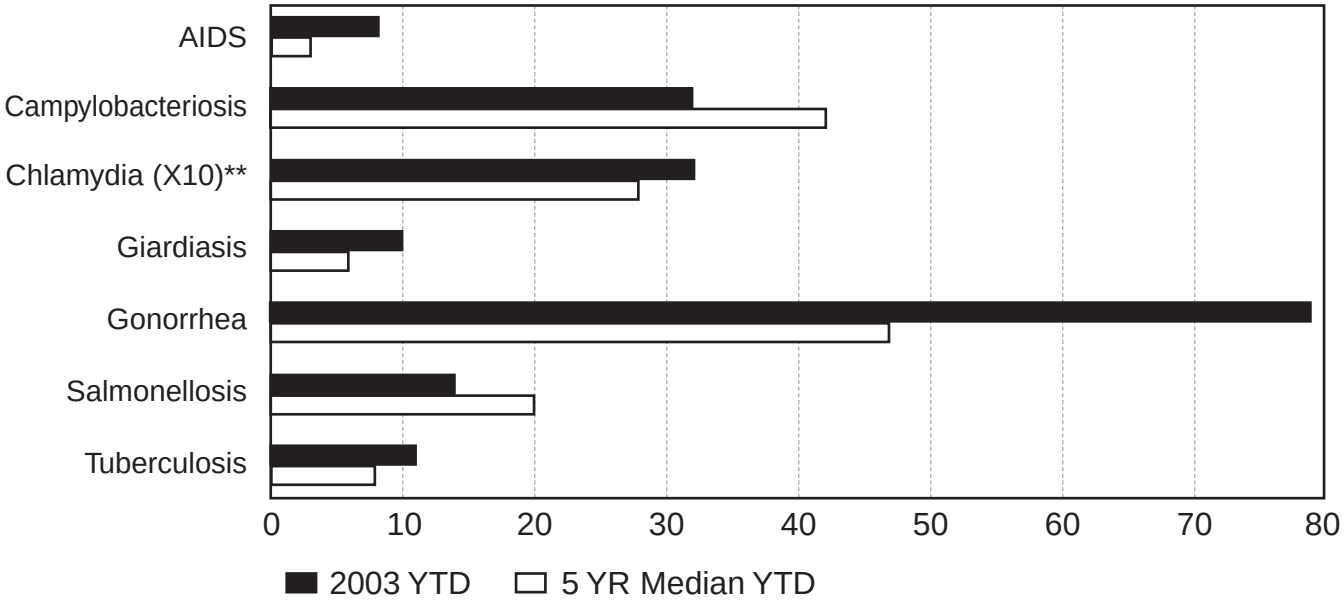
Branches Programs submitting Articles and the Number of Articles Submitted

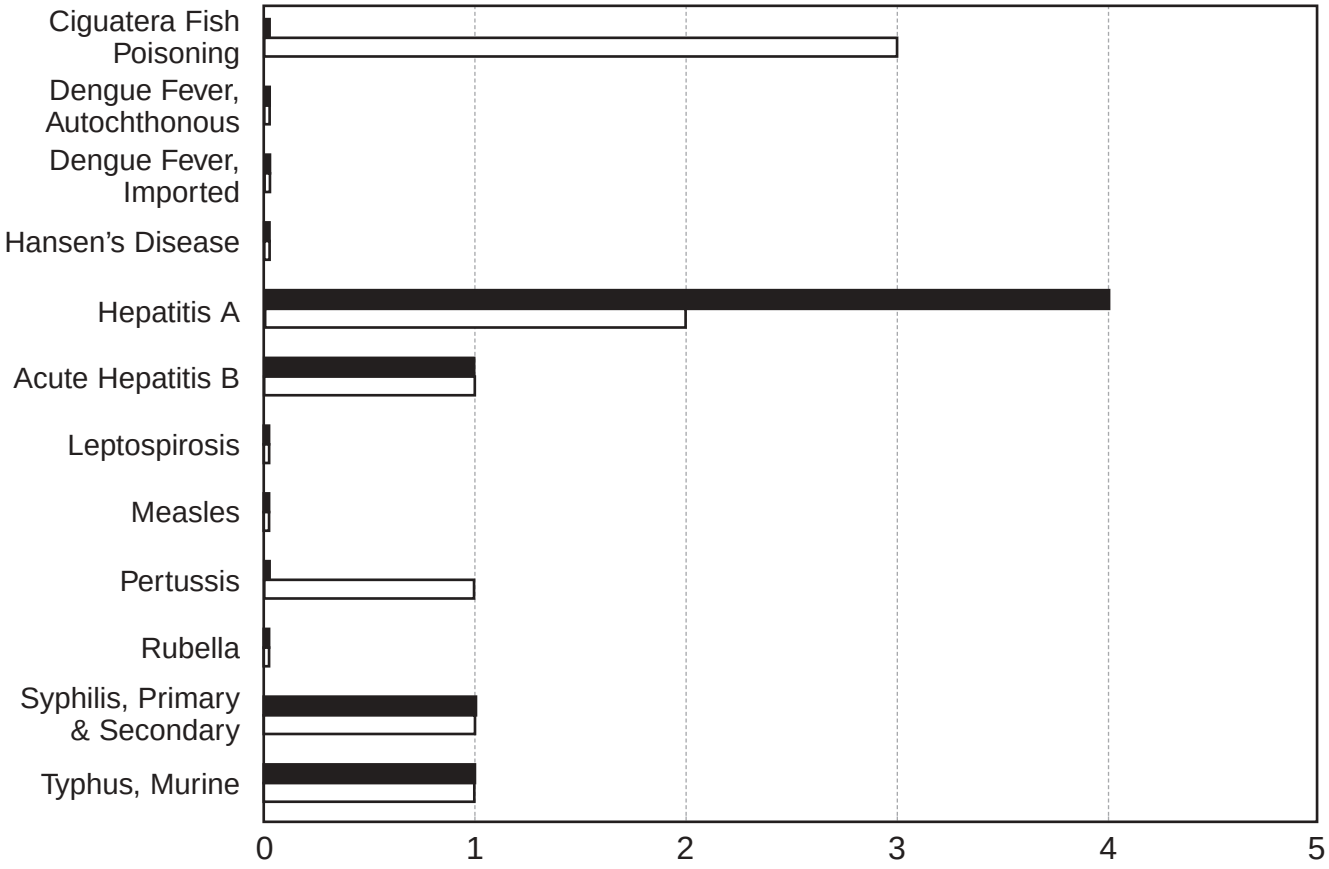
(1) Communicable Disease Division Administration (5)
(2) Hansen's Disease Branch (3)
(3) Epidemiology Branch – Zoonoses (10)
(4) Hawai`i District Health Office (1)
(5) Epidemiology Branch – Investigation Section (1)
(6) U.S. Geological Survey (1)
(7) STD/AIDS Prevention Branch – Sexually-Transmitted Disease Section (2)
(8) Epidemiology Branch – Hepatitis Control Section (1)
(9) Epidemiology Branch – Hawai`i Immunization Program (6)
(10) Epidemiology Branch – Influenza Surveillance (1)
(11) Tuberculosis Control Branch (2)

Submitted by David M. Sasaki, D.V.M., M.P.H., Veterinary Medical Officer, Epidemiology Branch.

Communicable Disease Surveillance

Selected Diseases by Date of Report*
Hawai‘i, 2003 Year-to-date Through January





* These data do not agree with tables using date of onset or date of diagnosis.
** The number of cases graphed represent 10% of the total number reported.

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Epidemiology Branch
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Communicable Disease Report

Paul V. Effler, M.D., M.P.H., Chief, Communicable Disease Division

January/February 2003

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